

ABSTRACT

A multi-panel sliding door includes a main drive to directly move a leading door panel and includes an auxiliary drive to smoothly accelerate a lagging door panel. In some embodiments, the auxiliary drive includes a hanging weight that urges the lagging panel to its open position. In another embodiment, the auxiliary drive includes a belt and sheave arrangement attached to the lagging panel. The leading panel is coupled to move the belt around two sheaves as the leading panel moves relative to the lagging one. The belt's movement is limited by a bumper that is attached to one point on the belt and is constrained to travel between one of the sheaves and a fixed stop attached to a wall or the track. As the main drive starts moving the leading panel to its open position, the relative movement between the two panels causes the belt to move the bumper up against the fixed stop. From there, continued opening movement of the leading panel continues rotating the belt around the sheaves. Since the bumper now holds a portion of the belt fixed relative to the stop, the sheaves begin to translate. This begins moving the lagging panel to its open position off to one side of a doorway before the lead panel reaches its open position in front of the lagging panel.

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